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ABSTRACT

Financial management at colleges and universities is considered in four articles based on presentations to a national conference at the University of Arizona. In "The Revolution in Financial Management in U.S. Higher Education," George Keller discusses changes that affect the administration of finances in academia, including demographic changes, the new place of the United States in the world economic marketplace, technological developments, and the changing structure of higher education. Frederick R. Ford's article, "Administration and Assessment of the Financial Plan," identifies budgetary and nonbudgetary factors that influence final results achieved by an institution, and factors influencing good budget management. William E. Vandament's article, "The Role of Financial Management in Institutional Administration," discusses purposes of financial management and a classification scheme for the sets of activities comprising financial management, along with the integration of financial plans. Finally, in "Recent Research on Incentives in Institutions of Higher Education," Stephen A. Hoenack reviews the research on the use of incentives in colleges and universities, and specifically the use of the responsibility budgeting system at public institutions. (SW)

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Topical Paper No. 23

ADMINISTERING AND MANAGING THE FINANCES OF COLLEGES AND UNIVERSITIES

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George Keller
Frederick R. Ford
William E. Vandament
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ADMINISTERING AND MANAGING THE FINANCES OF COLLEGES AND UNIVERSITIES

Edited by

Robert A. Wilson

Selected Proceedings
Ninth Annual Conference on Higher Education

Center for the Study of Higher Education
College of Education
University of Arizona

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THE REVOLUTION IN FINANCIAL MANAGEMENT IN U.S. HIGHER EDUCATION

George Keller

During the past three years, as I have traveled and done research for a book and worked as a consultant at Barton-Gillet, I have had the opportunity to meet with and observe the work of numerous financial vice presidents at America's colleges and universities. What I sense is that the world of financial vice presidents is going through dramatic changes. Most campus financial leaders are moving from backstage to the forefront. Some are now the most creative, entrepreneurial, and energetic people at their institutions.

This is new. For many decades academics have kept the financial people at their ledgers, removed from policy. Now, suddenly, financial people are being asked to help lead and keep their colleges vigorous and solvent in the difficult decade ahead. This is not only an important development in the history of higher education, it is also a shift that requires a new level of professionalism and closer ties with scholars for all financial executives in education. It demands new attitudes, new techniques, and new ways of operating.

The roots of this new, larger role for financial persons lie deep in the warm, slightly toxic soil of change within the United States itself. For any financial leader who hopes to perform well at his or her enlarged task, it is important to understand the dimensions and implications of this change. As America has become more of a knowledge-based society, higher education has become inextricably linked with this nation's economic growth, social justice, military security, and cultural strength. The external environment is now at least as important as internal factors and wishes in determining the life of our colleges and universities.

Mr. George Keller is Senior Vice President, the Barton-Gillet Company.

Some believe these external forces will cause several hundred campuses to go under between now and 1996. But the changes carry with them opportunities as well as threats, and those who comprehend the nature of the changes will be best equipped to benefit from them.

There are four great changes, in my view. The first is an extraordinary three-part demographic change. The most publicized part of the change is the decline in births in the 1960s and 1970s that will result in a 25 percent decline in the number of young people of college age in the U.S. between 1980 and 1995. While there were nine million persons ages 18-21 in 1980, there will be eight million in 1985 and only seven million in 1990.

What is most significant is that this is the first time higher education has ever had to face such a long, deep decline in the number of potential students. All our patterns of leadership and financial administration are based on enrollment growth or steady-state. We are not prepared in our college management styles and procedures to deal with retrenchment—or agressive, competitive marketing to prevent retrenchment. Since most university budgets are geared to FTE enrollments, the financial implications of this decline in traditional students are obvious and serious. This change alone will call for creative efforts in financing education.

Another part of the demographic change is the resurgence of mass immigration to the United States. More than 11.5 million new people immigrated to the United States between 1970 and 1980, making it the decade with the largest immigration since the turn of the century. What is unusual is that most of these new immigrants come from areas that have not previously sent large numbers of people to the United States: Asia, Latin America and the Caribbean, and the Middle East. This new tidal wave of immigrants has already affected higher education in Florida, Texas, Arizona, New York, California, and Colorado; it is bound to affect universities in most other states in the coming decade. The Hispanic population, for instance, is the youngest in the nation; half are under 23.2 years of age. And their educational aspirations are rising. In 1970, 48 percent of Hispanics aged 25-29 had completed high school; in 1980, 58 percent had. Services for these new students will be costly.

Incidentally, American's graduate schools are becoming the graduate schools of the world. One of eleven U.S. graduate students is now foreign, and last year they earned 52 percent of all the Ph.Ds in engineering awarded. There were 337,000 foreign students studying in America in 1982-83. By 1990, the number could be 500,000. This is a new source of revenue and enrollment stability.

The third part of the demographic sea-change is that we are becoming a geriatric society. As the number of births has declined and the wonders of medical science and better nutrition have kept persons alive longer, the number of old people in America is growing. Twice in the past decade, we have faced the prospect of our social security system going broke. And despite a $300 billion tax increase last year, the combined payments of social security benefits and Medicare fees could possibly cause another crisis by the mid-1990s. In 1979 about 27 percent of the federal budget went to the elderly through Social Security, Medicare, and federally financed pensions; today it is 30 percent; fifteen years from now it could be 40 percent.

The move to a geriatric society has numerous implications for education. Elderly voters have less interest in taxes for schools and universities. Rising social security and health care contributions by employers raise the cost of colleges, which are labor-intensive. And public money going to the elderly in ever larger chunks tends to squeeze out dollars available for the support of research, higher education, and student aid.

A second major shift is the new place of the United States in the world economic marketplace. For more than a century, America has experienced extraordinary economic growth. Aided by the wartime destruction in other leading nations and by cheap petroleum, this country experienced astonishing prosperity for nearly three decades after World War II. In 1974 we were the richest nation per capita producing 34 percent of the world's goods with less than 6 percent of the population.

But in 1973, the OPEC oil cartel was formed. Japan began to invade our domestic and foreign markets. South Korea, Taiwan, Germany, Brazil, Sweden, and other nations became strong competitors, too. Since 1974, every year (except 1975) has resulted in a negative balance of payments for the country; in 1983 the outflow reached $64 billion. Millions of manufacturing jobs have moved to other countries with cheaper labor. We have slipped to fourth in national income per capita. Major cities like New York are permanently in debt, and the annual deficits of our federal budget are escalating toward the $300 billion mark. World wealth is being redistributed, and we have not adjusted our policies and liberal impulses to this new condition.

Our economy, however, is adjusting in several ways. We are becoming a service society. Fewer than 17 percent of America's work force is in manufacturing. This has many implications for education. A service society requires people with personal skills, quantitative abilities, technological skills, and self-initiative. Also, we are becoming a society that deals more internationally. Foreign languages and knowledge of foreign cultures are assuming a new importance.

Higher education will have some especially difficult adjustments to make because its costs, which are not easily susceptible to productivity gains, are rising faster than the consumer price index. A college education will soon cost $15,000 to $20,000 a year. Pressures will undoubtedly mount for reducing education costs and finding more creative ways to finance university learning.

The third major shift is in technology. The computer, especially when tied to modern telecommunications, may be the most significant technical advance to affect education since Gutenberg' invention of movable type. It is now technically possible to develop a course in Tucson, beam it to a satellite, and have it viewed in Halifax, Nova Scotia or Lima, Peru. One can now put the lectures of 100 of America's most brilliant professors on videotape and sell them for home study as an "All-American University Curriculum." The Japanese and Taiwanese are already beginning to teach their populations that way. And the Public Broadcasting Corporation has just commissioned Cal Tech and Yale to develop the first television courses—in physics and French—of a national program of courses to be broadcast throughout the land.

Financially, the technological revolution has forced the already hard-pressed campuses to invest in better scientific equipment and computers, which are expensive. University libraries are being transformed by technology. And financial officers are in the forefront in computer use, including the growing employment of computerized financial planning, something higher education has not previously seen.

A fourth shift is within the structure of higher education itself, which complicates the work of campus financial leaders enormously. Not too long ago, colleges were mainly for full-time students aged 17 to 24. Now 36 percent of all those enrolled in higher education are older than 25, and more high school students younger than 17 take courses each year in summer, at night, or on Saturdays. Even the number of retired people over 62 enrolled in colleges is expanding rapidly. Our colleges and universities are becoming less like academic finishing schools and more like great public libraries where citizens from puberty to senility come to learn. Two in five now study part-time; one-third of our faculty members now teach part-time.

Nearly every financial officer now has to consider the costs of instruction off-campus in business or military bases or community centers. And, with one-fourth of all teaching faculty now unionized, collective bargaining has become a huge new effort.

All these changes, and others, mean that financial officers cannot do business as usual. They need new ways of operating, of looking at their affairs, and of seeing their role within higher education.

Along with other academic leaders, campus financial executives will need to move from the administration of day-to-day affairs to management of their priorities, changes, and future of their institutions. They will need to move from the periphery of college leadership to the center. They will need to open more and more of the institution's financial accounts to the scholars who are being asked to help with strategic planning at their campuses. They will probably need to communicate better with others at the campus, through new financial newsletters and personal meetings, about the emerging financial situation of their campuses. They will certainly have to do more financial planning.

In short, the position of chief financial officers at our colleges and universities is changing radically, and each will be required to become a more central figure than ever before.

Financially, financial officers in education are already responding, some with extraordinary creativity and verve. At George Washington University in Washington, D.C., for example, the financial leaders have invested in real estate in a way that could double the university's endowment in the next decade. One college bought a television station, improved it, and sold it at a tidy profit. Wells College in New York State dug its own natural gas well. The University of Pennsylvania will this fall initiate a new way of paying for college, improving on the plans of Washington University of St. Louis, the University of Southern California, and several other institutions that have developed bold new tuition payment schemes. Credit cards are being accepted. Colleges are requiring full tuition at the beginning of each semester so they can capture interest on that capital during each semester.

Financial aid is increasingly being used as a recruiting device to enlist the finest students, as in the University of North Carolina's Morehead scholarships. Non-academic charges—for athletics, health, counseling, food—are becoming unbundled. Merit pay for the most productive professors is spreading to improve quality and stem mediocrity.

Financial officers are consciously investing in areas that will promote the strength of their campuses: biotechnology, admissions and marketing, computers, attractive buildings and grounds. Vermont's struggling Bennington College is trying to sell its entire campus in a complicated lease-leaseback deal. Bryant College of Rhode Island has a financial officer who is financing a multimillion dollar addition to its library with one-year put bonds at the

amazingly low rate of 6¼ percent. Throughout the land, financial executives in higher education are becoming less and less bookkeepers and accountants and more and more creative entrepreneurs enabling their institutions to continue to flourish despite hard times.

Financial officers are becoming the innovative risk-takers, cautiously, shrewdly, bolding shaping the future of their institutions through increasingly creative financing arrangements. This is a grand emergence. It is also a terrible new responsibility. But the next dozen years will require nothing less from financial officers if American higher education is to emerge from its unprecedented turbulence strong and solid.

ADMINISTRATION AND ASSESSMENT OF THE FINANCIAL PLAN

Frederick R. Ford

Clearly, the final results achieved by an institution within the context of its budget for a specific period are a function of several things:

1. How well the budget was prepared (both as to the process and the decisions) has a great influence on the results that can be achieved. It is tough to manage an ill-conceived budget to achieve great results—especially if you did not participate in the process. So preparation is the first factor.

2. Once the budget is prepared, the relative success or failure depends upon how well it is implemented and managed. Naturally, it is always easier to obtain good results if there are lots of dollars available, but even then, it is crucial how we manage whatever dollars we have. Hence, budget management is the second factor.

3. The results are impacted by nonbudget influences. Management can be defined as bringing together faculty and students in the appropriate facilities with the necessary support services—and a part of management is leadership and motivation, both nonbudgetary factors which influence results.

4. Our environment—that we create—is an important factor in determining the final results we can achieve. The definition of a university that I like best is "an environment for learning." Within this we have an environment for budget management, and there are some key factors

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Dr. Frederick R. Ford is Executive Vice President, Purdue University.

which influence whether that environment will be conducive to good budget management. Some of these factors are

a. The style of management of the institution—and each of the budgetary units. While we generally think of universities as the extreme case of participative management, this is sometimes not true with regard to budgets. It is very important that line managers prepare the budget as well as *manage* it. Naturally, staff people must assist.

b. Flexibility. One of the most important factors in determining how well we can manage the funds within our budget is the degree of flexibility we have. Too often states impose budget restrictions on institutions that prevent them from operating the most efficiently and effectively—line-item budgets are a case in point. And institutions impose constraints on budgetary units—which may be as bad as those imposed by the states. Severe restrictions on the use of salary savings are a case in point. Note, in cases of reallocation, restrictions must be imposed.

c. Incentives. If we want people to manage their budgets to maximize results, we must be sure our policies and procedures give the right incentives. Allowing the carry-forward of some or all of year-end balances is an example of a positive incentive not to spend the last dime by June 30th. Note the phenomena of anti-rules.

d. Information. If we expect people to manage their budgets well, we must provide them with budget information which is current, accurate, complete, and understandable. Naturally, this is easier said than done, but increased computer capabilities and dispersed information processing will make this factor more achievable.

e. Recognition of the importance of *management* in achieving the best results. Too often academic departments are collections of individuals each pursuing their own goals. Under these conditions, budget management becomes unimportant housekeeping details. Budget management must be emphasized to achieve the best results. At Purdue we put a business manager in each school to help the deans manage their budgets.

f. Philosophy of helpfulness. The central administration must have a proven philosophy of wanting to help the schools and departments. And one of the ways they can be most helpful is to minimize bureaucracy.

All of these are part of the environment in which we must manage—a very important element.

Turning now to another facet—it is often said that a little knowledge may be dangerous, but I would add a whole lot of knowledge is very helpful. To prepare and manage the budget—and to assess the results—it is necessary to understand the various factors at work. Some of the more important ones are (and my emphasis will be on budget management)

1. Budget needs vary by discipline

   a. Salaries of faculty. Some cost more than others; more opportunities to move

   b. Teaching loads. Like salaries are influenced by the national marketplace

   c. Facilities (buildings and equipment).

2. Class sizes greatly influence costs.

3. The cost of a program is largely dependent upon the funds available.

4. If you have to select one factor that most influences the results, it is the quality of the faculty.

5. Reality is that 80 to 90 percent of the budget is "fixed" by existing people—most of whom have tenure. Thus, we manage only 10 to 20 percent of the budget activity.

6. While the budget is generally viewed as "fixed," the conditions of operation are constantly changing. This is where contingency reserves, gift funds, salary savings, etc., come into play. The budget must be managed constantly.

7. The income side of the budget must be managed too—collection of *all* the fees, charging indirect costs, charging for various services, management of cash flow and short-term investments, etc.

8. The difference between recurring and nonrecurring funds must be understood and used appropriately.

9. As needs are constantly changing, reallocation must be done continuously. Furthermore, reallocation of any significant proportions should be done over time through careful planning.

10. Since there are never enough funds to do everything, it is necessary to make priority judgments—constantly—because expenditure proposals come serially rather than all at once. Need a "war chest" somewhere to use to start new activities.

It is important to understand certain technical aspects of budgeting too:

1. There need to be contingency reserves—but how many and how much—how will they be used, etc.? Having too many is almost as bad as having too few.

2. Central management control needs to be at the outer boundaries, whereas departmental control needs to be much more detailed.

3 .Management of generally funded operations is different from that of an auxiliary enterprise. Recognize and treat them differently.

4. Sponsored programs (restricted) can generate salary savings that can be used judiciously—but "soft money" carries risks—must plan for this.

5. Gift funds are generously nonrecurring although an annual rate might recur regularly. If possible, use them on nonrecurring items.

6. Needs are never even throughout the year—peaks and valleys.

7. Services can be provided on a charge basis or free, and the demand for them will be quite different.

Much of what I have already said applies to budget assessment as well as budget management, but I want to mention briefly several key points:

1. Budget assessments must be an integral part of the budget cycle. It should be part of the closed loop of planning, development, implementation, and assessment.

2. Assessment, like budgeting, is a continuous process—might want to supplement with periodic in-depth reviews.

3. Much of assessment is by necessity *judgment*. It is in the eye of the beholder and depends heavily upon the experience and knowledge of the assessor.

4. Assessment must be done by line management with staff supplying any necessary data.

5. Assessment must be positive and fair in nature, or it will not produce positive results. After all, the main reason to make assessments is to determine the need for change, i.e., improvements.

6. In making assessments, care must be taken not to come to erroneous conclusions. Many factors influence results, and it is not easy to identify the cause and effect relationships.

THE ROLE OF FINANCIAL MANAGEMENT IN INSTITUTIONAL ADMINISTRATION

William E. Vandament

Introduction

This session on the role of financial management coincides with the start of a project by NACUBO's Financial Management Center to develop a guide to principles and practices for effective financial management in higher education. The NACUBO project, supported by the Exxon and Lily Foundations, has been undertaken after discussions within the NACUBO Financial Management Committee over the past two years on fundamental concepts of financial management.

The Committee—as it struggled to reach agreement on a definition of financial management—could find no comprehensive treatment of the subject in the published literature. To some writers, the term *financial management* refers to investment management; to others, it denotes budget planning—primarily of expenditures; and to others, it is comprised primarily of controlling and accounting activities. In short, it appears that each writer on this subject tends to stress some limited components of financial management.

This finding, I must confess, was somewhat unnerving to the Committee. The thought occurred to one of our members that there might be as many as a half dozen or so of our colleagues out there operating with somewhat limited views of the sweeping range of activities that are necessary for effective financial management.

Dr. William Vandament is Acting Provost, California State University.

Lest we form too harsh a judgment of our profession, however, we should remind ourselves of our relatively short history. The organizational structures and distribution of assignments for financial management responsibility have evolved over time in the colleges and universities of the United States. Central budget offices for institutions began to appear in significant numbers only in the early 20th century. And even today, institutions vary greatly: first, in the degree to which financial management activities are centralized and, second, in the distribution of financial responsibility among the various officers of the colleges and universities.

It is clear, however, that a new profession has been emerging in the United States during the past few decades. The practitioners of this profession come from a variety of backgrounds—some from various academic disciplines and others from business and government administration—and they carry a variety of titles in American higher education. As they have learned and applied their craft, they have borrowed liberally from the fields of business finance, economics, and accounting. Because academic institutions differ in many respects from those of business and government, the members of this new profession have also developed a body of knowledge that is unique to higher education.

The purpose of this presentation is to provide a framework which addresses substantive issues in financial management. To some observers, what follows in this presentation often may seem to be a mere restatement of the obvious. Indeed, this paper has a deliberate "back-to-basics" theme. The intent, however, is to review the basic elements of financial management to begin the task of creating a coherent definition of financial management.

It is time now to move, first, to some basic assumptions about the purposes of financial management and then, second, to a classification scheme for the sets of activities comprising financial management.

Purposes of Financial Management

The primary purposes of financial management in a college or university are (a) to ensure to the extent possible that valued instructional, research, and public service activities are supported by adequate resources and (b) to protect the future capability of the institution to continue such activities.

We sometimes lose sight of the fact that nearly all academic and administrative units play a role in effective financial management. In addition to administrative budgeting strategies, the fiscal health of a college or university rests upon vigilant collection of tuition and fees, an investment program with high total yield, full return to overhead costs from sponsored

program activities, efficient use of physical facilities and utilities, a productive faculty, adequate controls over expenditures, etc. A chief financial officer does not accomplish all of those objectives alone.

In short, effective financial management is attained only when all of the institution's units achieve their income potential and provide effective services with efficiency. A further requirement is, of course, that available resources are applied to activities in a pattern reflecting institutional priorities and consumption requirements.

Classification of Activities

Moving now to the classification of the activities comprising financial management, we will use four categories: forecasting, creation of the financial management plan, management of the plan, and assessment of the plan. I hope that this type of categorization will make the numerous elements of financial management coherent and subject to analysis.

Forecasting

Forecasts must be made periodically of the resource requirements for institutional activities and the income potential from various sources to meet those requirements. Such forecasts are made for factors not under institutional control, e.g., inflation and interest rates or student demographics and for factors which may be affected by institutional decisions, e.g., enrollment limitations, program changes, or changes in investment strategy.

Creation of the Financial Management Plan

Using information from the forecasting activities, financial plans must be created which provide for a match between resource availability and resource consumption. This set of plans, created for each organizational unit of the institution, must be integrated into a consolidated financial management plan through the definition of performance expectations, policies governing the financial relationships among the various units, and income and expenditure targets. The central document of this plan, the institutional budget, usually covers a specified period of time, e.g., one year, despite the fact that individual projects may be budgeted for varying durations and starting dates. The financial management plan, once adopted formally, should include not only standard budget information defining income expectations and expense limits but also contingency plans for dealing with deviations from the plan. Further, this plan should define specific responsibilities for the provision of services and production of income.

Management of the Plan

Following plan adoption, subsequent financial management activities must be monitored and controlled.

- Financial transactions must be recorded and controlled to ensure that institutional activities are consistent with its authorized plan.

- The heads of institutional units must manage the activities within their areas of responsibility so that the institution achieves its targets for resource acquisition and provides services in as effective a manner as possible. Here we are speaking of such diverse activities as investment management and management of the parking facilities.

- Information must be collected throughout the period defined in the plan so that reports are available to assess performance, determine whether contingency plans must be used, and provide information that demonstrates accountability to various internal and external constituencies.

Assessment of the Plan

Periodic assessments must be made of the institution's activities to ensure that its educational activities are achieving their purposes, that the distribution pattern of resources among units is congruent with need, that revenue acquisition is reaching its potential, that resources are being used in efficient and effective ways, etc. Such evaluation activities provide information to be used in the forecasting and planning activities for subsequent periods of time.

Division of Responsibilities

As noted previously, responsibilities for the financial management of a college or a university are distributed among the heads of each of the university's academic and administrative units. Successful financial management therefore requires that responsibilities for management are defined clearly as they are delegated to this large number of units and that the separate activities of the units are coordinated in the common service of the university's plan.

Colleges and universities vary widely in the emphasis placed on the coordination of these separate activities. In some private colleges and universities, each academic unit functions with few central support services and is expected to manage its own financial affairs in a manner that will not place burdens on the remainder of the institutions. In other institutions,

resource acquisition and allocation are centralized, and a much higher degree of coordination and line administration of financial management activities results.

Despite major variations in the degree of financial management centralization, however, there usually exist in American colleges and universities one or more officers whose primary responsibility lies in the coordination of financial management activities and the administration of central financial management services. In some cases, a single chief fiscal officer, e.g., a vice president for finance or a vice president for business and administration, will have primary responsibility for integrating the activities listed earlier. In other institutions, the central responsibilities may be divided among two or more officers. In any event, an officer or small team of officers is charged with monitoring the financial management activities of the various units in addition to administering financial management services, e.g., budgeting, controlling, that are provided centrally.

Such institution-wide responsibilities for financial management, although common today in the United States, would have been regarded as radical in the traditional European university when confederations of faculty provided instruction and collected the fees for such individually. Even today, the existence of financial administrators at the vice presidential or vice chancellor level is rare in universities outside of the United States.

In summary, the institution's chief fiscal officer—or team of officers—typically has, or should have, the following roles in the financial management of the American institution:

- Line administration of those central offices engaged in financial management—offices of planning, budgeting, treasurer, bursar, accounting and accounts payable, etc.

- The primary responsibility for advising the institution's chief executive on financial management matters.

- Coordination of the financial management activities of the separate academic and administrative units in the absence of general line responsibility for those units.

- Provision of leadership and education in effective financial management for all of the institution's academic and administrative units.

In some institutions, responsibilities for a variety of administrative services—plant operation and maintenance, security, facilities design and construction, personnel services, computer center, etc.—are also assigned to the chief fiscal officer or officers.

The goal of this perhaps tiresome recitation of basic factors has been to highlight the extent to which the chief financial officer, or team, must coordinate and provide educational leadership to other colleagues who have major responsibilities for effective financial management. In other words, much of the important work of financial management is not under the direct line administration of the chief financial officer. To be effective, therefore, that officer must develop communication and persuasion skills to compensate for the absence of clearly defined authority.

Integration of Financial Plans

The coordinating and integrating roles of the chief financial officer or officers are reinforced further by the fact that funding sources for higher education activities are multiple. As noted in prior sections of this presentation, what is referred to as a college or university financial plan is, in fact, a consolidated statement of the multiple financial plans of its several academic and administrative units. In turn, however, these units may receive the funds to support their activities from several sources, each containing its own set of (a) restrictions on use and (b) activities necessary for their generation.

A college or university customarily allocates funds to some of its units from an unrestricted general fund that is formed by pooling funds obtained from various unrestricted sources, e.g., tuition, unrestricted gifts, unrestricted state or federal allocations, unrestricted endowment and cash management earnings, etc. These funds are acquired by the units on the basis of requests to the central administration which sets priorities for its own allocation of such funds and the conditions under which the allocations occur.

Many units also earn a portion or all of their income through charges that are made for goods and/or services that are provided by the unit. Auxiliary operations in most institutions generate all of their income by charging for such services. Even academic departments may earn a portion of their income through such methods., e.g., through the provision of noncredit conferences, instructional services to external and internal organizations.

Academic units may also receive income through gifts and grants from, or contracts with, outside persons or agencies. Customarily, these funds contain restrictions on their use, i.e., are to be used for activities specified by the

outside donor or granting/contracting agency. In some cases, the specified activities would have been conducted in the normal course of departmental operation whereas in other instances the acceptance of funding entails the provision of services that the unit would not otherwise provide.

The activities of the academic or administrative unit may therefore be funded through a combination of income sources, and the financial plan for each unit will often involve the integration of the plans for income derived from several sources.

The central administration's role in the oversight of each unit's budget will therefore vary according to the conditions under which its income is generated. For that portion of a unit's income received from the unrestricted general fund, allocation decisions are made by the central administration. For activities supported by earnings from charges for services, the central administration's role is to ensure that the charges are reasonable, that income projections are realistic, and that the unit is being managed in ways that protect its future viability. Restricted fund activities are customarily reviewed to ensure that the activities specified as a condition of their receipt do not entail commitments that might jeopardize the unit's fiscal or program viability.

In summary, not only is the institution's financial plan comprised of a consolidated statement of the plans of individual units, but the plans of the individual units may likewise reflect the integration of plans and commitments for a variety of activities.

Thus fiscal management for a college or university can be viewed as the coordination of a complex economic community. It is not merely the making of allocation decisions or the controlling of expenditures or the management of investments. And the institutional administration's responsibility in the development and administration of such plans ranges from the generation and allocation of unrestricted resources to the monitoring of plans for activities that produce their own sources of revenue. In all these activities, effective financial management rests not only on the technical skills of the chief financial officers and staff but also on their ability to provide leadership to colleagues, on whom much financial responsibility rests, who were selected for attributes unrelated to financial management.

It is my hope that, in the not-too-distant future, we will have available for our use a comprehensive set of principles and practices covering the vast array of activities that comprise financial management—and a set of standards against which to assess our performance as financial managers.

RECENT RESEARCH ON INCENTIVES IN INSTITUTIONS OF HIGHER EDUCATION

Stephen A. Hoenack

There is growing recognition that in order to prosper, America's colleges and universities need to develop the flexibility to adapt to society's changing needs for education and research. However, such responsiveness is very difficult to achieve. The goals of individual faculty are seldom identical to those of higher education's various constituents; and, for two reasons, it is virtually impossible for administrators, and even less for funders, to impose on faculty their desired directions for academic activities. One of these is the well-known nature of governance in higher education institutions where faculty typically hold considerable authority over the academic enterprise and often even over the tenure of administrative personnel.

The second reason, high costs of accurate information about academic activities, is less well understood. Administrators in any organization need good information in order to make effective decisions. When an organization's personnel produce just a few easily measured and valued products using readily understood production techniques, it might be economical for managers to obtain the information needed to supervise lower-level employees effectively. In contrast, when there are many diverse, intangible products whose production requires specialized expertise, such information would be prohibitively costly. This is exactly the situation we face. Education is a little-understood process, which probably differs from field to field, where the ultimate value of learning is enhancement of the student's future economic productivity and personal well-being. When research is produced jointly with education, the process is even less quantifiable.

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It will never be possible for high-level administrators to do a good job of making detailed decisions about the processes of learning and research. How, then, are institutions to improve the decisions made by individual faculty, their academic units, and an institution's faculty governance structures? In the "incentive" approach to institutional planning and budgeting, it is suggested this end can be accomplished by rewarding academic units for being responsive to broad institutional goals and the demands of students and research clients while maintaining academic quality. The possibility of providing such rewards holds out the promise of enhancing the flexibility of higher education institutions while maintaining the decentralized structure of authority within them and avoiding prohibitively costly expenditures on information.

An individual working in any organization faces constraints that limit the available resources for the achievement of his or her objectives. In recent years we have seen increasingly restricted funding for salaries, sponsored and personal research, secretarial support, and virtually all other resources that help faculty achieve their personal and professional goals. The *incentives* facing faculty members are simply the resources that are valuable to them whose availability increases or decreases in response to their accomplishment of institutional goals and satisfaction of the demands of instructional and research clientele.

The following points about incentives lead to the conclusions that information is required for the establishment of desirable incentives and that, far from obviating the need for capable administration, a successful system of incentives in a higher education institution depends on the skill and judgment capabilities of its administrators. While it is possible for planners or administrators to design new incentives, personnel in organizations often face incentives that were never deliberately established or even intended. These incentives can be perverse, i.e., contrary to the organization's overall interest as attested, for example, by the well-known wasteful practice of quickly spending remaining budgets before the end of a fiscal year. Perverse incentives can explain sloppy teaching practices by faculty members who are capable of instructional excellence and the existence of short-term research output at the expense of the long-term significance of research.

The introduction of new incentives comes in the context of existing ones. These incentives are not necessarily supplanted by the new ones, and one should not leave to luck whether the two sets of incentives conflict or reinforce each other. Dealing with this issue requires some understanding of what are the important existing incentives faced by an organization's personnel. These incentives and their effects are, however, quite subtle, and insight is best

gained through achieving understanding of the structure of authority that leads to the incentives. There is an authority structure in higher education institutions in spite of frequent assertions to the contrary. However, this authority is usually either closely constrained by or directly exercised by the institution's faculty governance structure. It is much more difficult to understand how authority is exercised in colleges and universities and how these institutions place incentives on faculty than in organizations with simple chains of command.

Another point is that analytical tools are necessary to evaluate existing or proposed incentives. Elsewhere (Hoenack, 1983a) I have made a distinction between *overall responsibility incentives* and *specific responsibility incentives*. Under the former, an individual is held accountable for his or her outputs or contribution to outputs in relation to the value of the resources, including uses of one's time, which are placed under the individual's discretion. Such accountability is achieved by making an employee or group of employees responsible for the cost as well as value of output by ensuring that they make good on deficits and that they benefit from budgetary carryovers. This essentially provides a "profit" motive, although the profit frequently is not monetary. For example, being able to increase time for research activity frequently provides a "profit" motive for faculty.

Specific responsibility incentives are directed to an individual or group's particular activities and hence do not provide the same incentive to economize on resources used. The best known examples have been documented by Berlinger (1957) for enterprises within the Russian economy. Gross inefficiency has resulted when output quotas were either not accompanied by accountability for resources used to produce the outputs or these resources were priced far below their values in alternative uses. However, there are many excellent examples from American higher education when instructional incentives consist only of class contact hours and when research grants are given general overhead assessments in place of charges for their actual utilization of institutional resources.

Even though overall responsibility incentives lead personnel to use resources much more efficiently than specific responsibility incentives, there can be wide variation in the particular sets of outputs and inputs used to produce the outputs for which an employee is held accountable. Similarly, there are different ways in which these resources can be valued or priced. For example, faculty members can be held accountable only for research or they can be responsible for research and instruction. The relative valuations attached to research and instruction can vary, and the institutional resources used to produce either can be over- or under-priced in relation to alternative

uses. It would be ideal, but is not feasible, to reward instruction according to the future productive contribution of the imparted knowledge and for faculty to benefit from research according to its ultimate—often indirect—social contribution. In practice, much less precise rewards for instruction and research contributions are made. For example, instruction might be valued according to students' enrollment choices while recognition of research is based on peer evaluations. These valuations will fall short of the ideal to the extent that students' choices are uninformed or are based on leisure or amusement in college at the expense of future personal or economic gains and to the degree that current research trends are unrelated to research's long-term significance.

Another issue related to overall responsibility incentives concerns the division of the benefits of efficiency. An individual or group within an organization can draw a larger amount of resources than the minimum amount required to supply its outputs. The reason is the limited availability of alternative suppliers and these potential competitors' lack of information about production possibilities that would make their costs higher, at least initially. The same information advantage deters those holding authority within the organization from intervening into decentralized productive activities and requiring lower costs via directives. Monopoly positions held by an organization's individual suppliers are not necessarily broken down by incentives per se; additional institutional changes are required. In the case of higher education, such changes might include freer academic labor markets (and reduced reliance on academic tenure) along with voucher financing systems that give students more choice in spending educational subsidies.

Let us now turn to the type of incentive system which has actually been proposed and tried in higher education institutions. This is the responsibility budgeting system(RBS) which has most notably been implemented at the University of Pennsylvania (see University of Pennsylvania, 1973; Strauss, 1975; Strauss and Salamon, 1979; and Zemsky, Porter, and Oedel, 1978). In the following, I shall emphasize the needs for appropriate administrative interventions to make such a budgeting system successful. The focus here will be on public institutions where to date there has not yet been a fully implemented RBS. Some of the points are more fully elaborated in my 1977 paper and in the 1974 co-authored paper. Other relevant papers are Dunworth and Cook (1976) and those in Lumsden (1974).

An RBS is an overall responsibility incentive system that can be applied either at the level of individual departments or colleges within a university. The problem of valuing instructional outputs is dealt with by tying departmental or collegiate shares of the institution's instructional revenues to

the enrollments that they attract. (It is possible, but not essential, for tuition charges to be differentiated according to instructional costs and/or the attendance demands facing each responsibility center.) In addition, responsibility centers are charged for the resources they use; and when it is necessary to use formulas to allocate to centers their shares of the costs of jointly-used resources such as libraries and administrative functions, those formulas are designed as much as possible to measure actual usage of the resources. Most importantly, each responsibility center is allowed to keep a portion or all of its excesses of revenues over costs and must make up its deficits. These revenues are not necessarily allowed to be reflected in cash compensation for faculty; the motivational effect can be in terms of resources available to faculty for research and other activities and in terms of the relative growth of the academic programs of the institution's different responsibility centers.

Aside from giving faculty strong incentives for efficiency, an RBS considerably enhances students' influence on the institution's activities. Faced with the desire to attract instructional revenues, academic departments have an interest in rewarding faculty who attract students. As a consequence, instructional productivity (in terms of students attracted) will compete with research productivity as influences on the compensation and internal recognition that faculty receive. Another attribute of an RBS is reduced influence of political activity in the determination of budgets and a resulting diminished ambiguity of the institution's fiscal affairs.

It is often implied that an RBS is a laissez faire educational market. This is not true, at least, if the RBS is to be an effective tool for enhancing the institution's overall well-being. A number of crucial educational issues become explicit in an RBS that must be dealt with effectively by active and sophisticated administrative intervention. One of these is that there are winners and losers in an RBS. Frequently, those programs which face decreased revenues in an RBS do so justifiably, for instance, because of declining demand with little offsetting merit of exceptional quality or importance to the institution as a whole. For such programs, an RBS gives faculty incentives to put their best efforts forth to attract enrollments. If they do not succeed, the RBS relatively impersonally and directly reduces their revenues, an outcome that might be delayed or not occur at all in traditional budgeting systems. However, there may be compelling arguments for maintaining all or part of a program's funding in spite of declining demand. Its faculty might be unusually distinguished, and it might be regarded to be important to the institution's identity as is, for example, the case with many liberal arts programs. The way this problem is dealt with in an RBS is through a subvention system. Part of each responsibility center's revenues are taxed, and then this revenue pool is used to subsidize particular units. In this manner, all subsidies are explicit; it is possible to weigh against the size of each

subsidy the deemed importance of the arguments justifying it. This contrasts with cases where many programs are implicitly and unintentionally subsidized. While some such subsidies would perhaps be increased if deliberated upon, others should be dropped altogether.

Other important administrative interventions into an RBS include adjudicating disputes over cross charges between responsibility centers, regulating "zero-sum" competition among these centers, and enforcing quality standards. Responsibility centers will attempt to charge others more than incremental costs of services provided, and others may attempt to add duplicative faculty. They will also tend to compete for the same students as well as attempt to attract additional students to the institution. There is a tendency to attract additional students with programs having sub-par academic standards. These actions are not necessarily, but often are, harmful to the institution. It is feasible to control them, and the success of an RBS depends to no small extent on how effectively administrators intervene in the interest of the institution's overall welfare. Hence, an RBS provides highly specific roles for the institution's administration; these functions are much less ambiguous than under traditional budgeting systems.

For a public college or university, the legislative response to an RBS is critical. As noted, an RBS tends to reduce an institution's costs, increase its enrollments, and make its internal budgeting less ambiguous. While cutting costs, faculty and administrators would want to be able to plough the savings back into programs rather than have them taken away by funders. The institution would want the increased enrollments to be funded and would not want a more readily understood budgeting system to be an invitation for legislative interference. It should be noted that in regard to expenditure of the cost savings on program enhancement, these expenditures would be documented as part of the institution's budget. In effect, the cost savings would remain justifiable expenditures—what would change are the size and quality of the institution's academic programs.

At the University of Minnesota we have implemented an econometric model of this institution's legislative appropriation which provides some evidence bearing on the funding of increased enrollments and the likelihood of legislative interference. This model, described in Hoenack (1983b), consists of equations representing three sets of behavioral relationships that jointly determine the university's legislative appropriation, its tuition charges, and its enrollments. The relationships include legislative demand for enrollment places, institutional supply of these places, and students' own enrollment demand. Underlying the legislative demand relationship is an analysis of interest-group influences on legislative spending that makes it possible to use consumer demand theory to derive a legislature's demand functions for the educational and other services it provides to constituents.

Because enrollments in more costly programs do not necessarily constitute more influential interest groups, it was hypothesized that total enrollments, not their mix, is a key influence on legislative funding. It was also hypothesized that observed institutional costs are constrained by legislative demand. A legislature would prefer to exercise control over any public organization to reduce what it must pay below its potential willingness to pay, i.e., its demand. However, because it is so costly to exercise control over a public research university, the legislature must pay this full amount. That is, total costs faced by the legislature tend to equal the entire area under its demand function. The model was estimated with annual time-series data in 1951, and its hypotheses were found to have considerable support. In particular, the sizes of interest groups were found to have strong effects on legislative funding. However, while the composition of the enrollment interest group, e.g., between those in high-cost and low-cost academic programs, affected institutional costs, this variable had no statistically significant effect on the university's legislative appropriation. Perhaps the model's most interesting finding is that observed institutional costs at one public research university do not represent minimum costs faced by faculty but are constrained by legislative demand.

These results provide some evidence that a legislature would indeed fund the extra enrollments that would result from an RBS. Further, since total enrollments represent the main institutional variable in legislative funding choices, it is unlikely that an RBS would result in legislative intervention into this research university's internal activities. Further econometric work on legislative behavior in other states needs to be done before it will be possible to reach general conclusions about legislature responses to RBSs in public institutions.

We are beginning to have more theoretical understanding about the effects of incentives on the behavior of personnel in higher education institutions. Empirical work is needed and is only in the earliest stages. Some of this work is discussed in Hoenack and Berg (1980). We are also conducting a study of costs and incentives in six academic departments of the University of Minnesota. I believe that while the incentive approach is not a panacea, it has a great deal of promise.

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